Manipulating Integrals – Find the following indefinite integrals by algebraically rearranging their integrands

$$\int \frac{x^3 + \sqrt{x}}{x^{\frac{3}{2}}}\, dx =$$

$$\int \frac{dx}{\sqrt{x^2 + 6x + 16}} =$$

Integration by Parts – Evaluate the following integrals

$$\int x \sin x\, dx =$$

$$\int_1^2 \ln x\, dx =$$